

## Multimedia Video/Audio Playing Device

### [FIELD OF THE INVENTION]

The present invention relates to a multimedia video/audio  
5 playing device, and more particularly, a multimedia  
video/audio playing device capable of being associated with  
a portable multimedia player so that the video/audio signals  
from the portable multimedia player can be transmitted to a  
display unit and a speaker to provide better image and sound  
10 qualities. The multimedia video/audio playing device of the  
present invention can apply to various portable multimedia  
players.

### [BACKGROUND TO THE INVENTION]

15 With the advancement in image and sound technologies, not only  
the size of a video/audio playing device is reduced so as to  
be portable, but also the sound or image quality is  
continuously increased to have gradually satisfied people's  
demand for high quality images and sounds.

20

As to the current technology, because an audio file can be  
compressed into, in particular, an mp3 format, a multimedia  
playing device of the same storage capacity can now store  
several times the file numbers than before. Especially, a  
25 portable multimedia player (PMP) such as iPod, iPod Nano,

mobile phone, even PDA... etc. has advantages of small size and portability, and thus has been gradually popularized.

Although the existing portable multimedia player has small  
5 size and light weight, yet the display screen thereof is relatively small. Obviously, it will be very tiring for aged people, children or people who have poor eyesight to read the text or image on such a small screen. In addition, the sound is outputted from an earphone; although the output power is  
10 small and the sound volume is restricted, yet the hearing may be damaged by long-termly listening to music via an earphone, and the damage is hard to be recovered.

Therefore, based on the inventor's many-year experience of  
15 designing and manufacturing with continuous thinking, manufacturing and correction, the present invention is thus born to solve the above-mentioned problems.

[SUMMARY OF THE INVENTION]

20 The main object of the present invention is to provide a multimedia video/audio playing device, onto which a portable multimedia player can be placed so that the sounds and images from the portable multimedia player can be played and displayed through the speaker and display unit to provide the  
25 user with better video and audio enjoyment.

The other object of the present invention is to provide a multimedia video/audio playing device, enabling other external devices to be associated therewith to play  
5 video/audio on its main body while the signals from the main body can be also transmitted to the external devices.

In order to achieve the above objects, the multimedia video/audio playing device of the present invention comprises  
10 a central control unit (CPU), an AV signal switch unit, a display unit, a speaker, an infrared receiving unit, an operation interface unit, a connecting device, a power circuit unit, a charging control unit, and a data storage device.

15 Among them, the central control unit connects with the AV signal switch unit; the AV signal switch unit connects with the display unit and the speaker to output video and audio signals, respectively; an external device is electrically connected with the AV signal switch unit for  
20 inputting/outputting the video/audio signals; the infrared receiving unit can receive radio signals and transmit the signals to the central control unit; the operation interface unit connects with the central control unit to control the video/audio signals outputted from the main device.

The central control unit has a connecting base electrically connected between the portable multimedia player and the central control unit for transmitting the signals mutually, the video/audio signals processed by the central control unit is outputted to the display unit and the speaker, and the portable multimedia player is charged by the charging control unit at the same time. The connecting device can connect with various external platforms to input data into or output data from the central control unit for processing, and can store data into the data storage device. The power circuit unit provides the electronic components inside the multimedia video/audio playing device with the required electric power.

[BRIEF DESCRIPTION OF THE DRAWINGS]

Fig. 1 is a schematic block diagram of the connection between the components according to the present invention.

[DESCRIPTION OF PREFERRED EMBODIMENTS]

In order to completely and clearly disclose the technical contents, objects and achievable effects of the present invention, a detailed description is hereby made below with reference to the drawings and the numeral references.

Referring to Fig. 1, an embodiment of the multimedia video/audio playing device (3) of the present invention is

showed. The multimedia video/audio playing device (3) comprises a central control unit (CPU) (31), an AV signal switch unit (32), a display unit (321), a speaker (322), an infrared receiving unit (33), an operation interface unit (34),  
5 a power circuit unit (35), a connecting device (36), a charging control unit (37), and a data storage device (38). The display unit (321) as used for displaying images and animations is particularly a liquid crystal display unit or other flat display unit. The speaker (322) is used for sound output, and  
10 the shape, power and structural arrangement thereof can be varied and modified by the persons skilled in the art.

The central control unit (31) is a processing core for encoding/decoding the inputted/outputted video/audio data  
15 and controlling other signals, and is connected with the AV signal switch unit (32). The AV signal switch unit (32) connects with the display unit (321) and the speaker (322) to output the video and audio signals, respectively. Also, a sound amplifying unit (320) can be further provided between  
20 the speaker (322) and the AV signal switch unit (32) for adjusting the sound volume, filtering the noise, setting the scene or equalizing the tone quality to increase the music or sound quality. Also, an external device (4) can be electrically connected with the AV signal switch unit (32)  
25 to input/output the video/audio signals. The external device

(4) can be a television, digital broadcasting device, digital TV signals or other similar video/audio playing equipments. The connection means between the external device (4) and the AV signal switch unit (32) can be an AV terminal, S terminal  
5 or the like.

The infrared receiving unit (33) can receive radio signals and transmit the signals to the central control unit (31), and particularly, the radio signals is transmitted from a  
10 remote control. The operation interface unit (34) connects with the central control unit (31) to control the video/audio signals outputted from the multimedia video/audio playing device (3). For example, the operation interface unit (34) can include a sound volume control key, a signal switch key..  
15 etc. for the user's inputting instructions to control the multimedia video/audio playing device (3) such as the control of sound volume, signal source switch... etc.

Also, the central control unit (31) can be electrically  
20 connected to the portable multimedia player (PMP) (5) through a connecting base for transmitting the signals mutually, and the video/audio signals processed by the central control unit (31) is outputted to the display unit (321) and the speaker (322).

The connecting device (36) can connect with various external platforms to input data into or output data from the central control unit (31). For example, the external platform can be a personal computer, a thumb drive, a card reader or a flash  
5 memory card, and the connecting device (36) can be USB, IEEE 1394 or other connectors adapted to computer peripherals. The central control unit (31) can further connect with the data storage device (38) for storing data therein, and the data storage device (38) can be a hard drive, a memory or other  
10 devices adapted to data storage. The power circuit unit (35) provides the electronic components inside the multimedia video/audio playing device (3) with the required electric power, and the power circuit unit (35) can be a battery, or is externally connected to home power source or vehicle power  
15 source through a power converter.

The above-mentioned embodiment or drawing is not intended to restrict the structure or size of the present invention. Any moderate alteration or modification made by the persons having  
20 ordinary knowledge in the art should be considered not departing from the scope of the present invention.

As can be known from the above, when compared with the portable multimedia player, the display unit of the present invention  
25 has a larger size and a better image quality, enabling the

user who has poor eyesight and ordinary people to read  
conveniently without tiring when using the device. Also, the  
speaker's sound output provides a more excellent stereo sound,  
enabling music, voice or other sounds clearer and avoiding  
5 the problem of hearing damage caused by the use of earphone.

As stated above, the embodiment of the present invention can  
actually achieve an expected effect of use, and the concrete  
structure as disclosed has not been found in similar products  
10 nor open to the public before filing an application.  
Therefore, the present invention completely meets the  
provisions and requirements of the Patent Act, and a utility  
model patent application is thus filed per the law. It is  
respectfully solicited that your Office after examination  
15 will grant the patent.

[DESCRIPTION OF REFERENCE NUMERALS]

- 3 multimedia video/audio playing device
- 31 central control unit
- 20 32 AV signal switch unit
- 320 sound amplifying unit
- 321 display unit
- 322 speaker
- 33 infrared receiving unit
- 25 34 operation interface unit



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- 35 power circuit unit
- 36 connecting device
- 37 charging control unit
- 38 data storage device
- 5 4 external device
- 5 portable multimedia player

What is claimed is:

1. A multimedia video/audio playing device, comprising:  
a central control unit capable of connecting with a  
5 portable multimedia player as a processing core for  
encoding/decoding the inputted/outputted video/audio data  
and controlling other signals;

an AV signal switch unit, connecting with the central  
control unit and having one end for connecting with an external  
10 device to input external video/audio signals and the other  
end for outputting the video/audio signals to a display unit  
and a speaker;

a display unit for displaying images;

a speaker for outputting sounds;

15 an operation interface unit, connecting with the  
central control unit, for the user's inputting operation  
instructions to executing various operations relating to  
playing; and

a power circuit unit, providing the electronic  
20 components inside the multimedia video/audio playing device  
(3) with the required electric power.

2. The multimedia video/audio playing device according to  
claim 1, wherein a sound amplifying unit is provided between  
25 the speaker and the AV signal switch unit for increasing the

sound quality.

3. The multimedia video/audio playing device according to claim 1, wherein the central control unit can connect with  
5 an infrared receiving unit to receive radio signals transmitted from a remote control.

4. The multimedia video/audio playing device according to claim 1, wherein the central control unit further connects  
10 with a charging control unit to charge the portable multimedia player.

5. The multimedia video/audio playing device according to claim 1, wherein the external device connected with the AV  
15 signal switch unit can be a television, a digital broadcasting device, or digital TV signals.

6. The multimedia video/audio playing device according to claim 1, wherein the central control unit further connects  
20 with a connecting device for connecting with various external platforms to input data into or output data from the central control unit.

7. The multimedia video/audio playing device according to claim 6, wherein the connecting device includes a USB  
25

connector and an IEEE 1394 connector.

8. The multimedia video/audio playing device according to  
claim 6, wherein the external platform can be a personal  
5 computer, a thumb drive, a card reader or a flash memory card.

9. The multimedia video/audio playing device according to  
claim 1, wherein the central control unit further connects  
with a data storage device for storing video/audio data  
10 therein.

10. The multimedia video/audio playing device according to  
claim 9, wherein the data storage device can be a hard drive  
or a memory.

## **Abstract**

The present invention relates to a multimedia video/audio playing device, comprising a central control unit (CPU), an AV signal switch unit, a display unit, a speaker, an infrared receiving unit, an operation interface unit, a connecting device, a power circuit unit, a charging control unit, and a data storage device. Among them, the central control unit connects with the AV signal switch unit; the AV signal switch unit connects with the display unit and the speaker to output video and audio signals, respectively; an external device is electrically connected with the AV signal switch unit for inputting/outputting the video/audio signals; the central control unit has a connecting base for placing and electrically connecting a portable multimedia player therein to transmitting the signals into the central control unit; the portable multimedia player is charged by the charging control unit; the connecting device can connect with various external platforms to input data into or output data from the central control unit for processing, and can store data into the data storage device. Thus, the better video and audio enjoyment can be obtained.

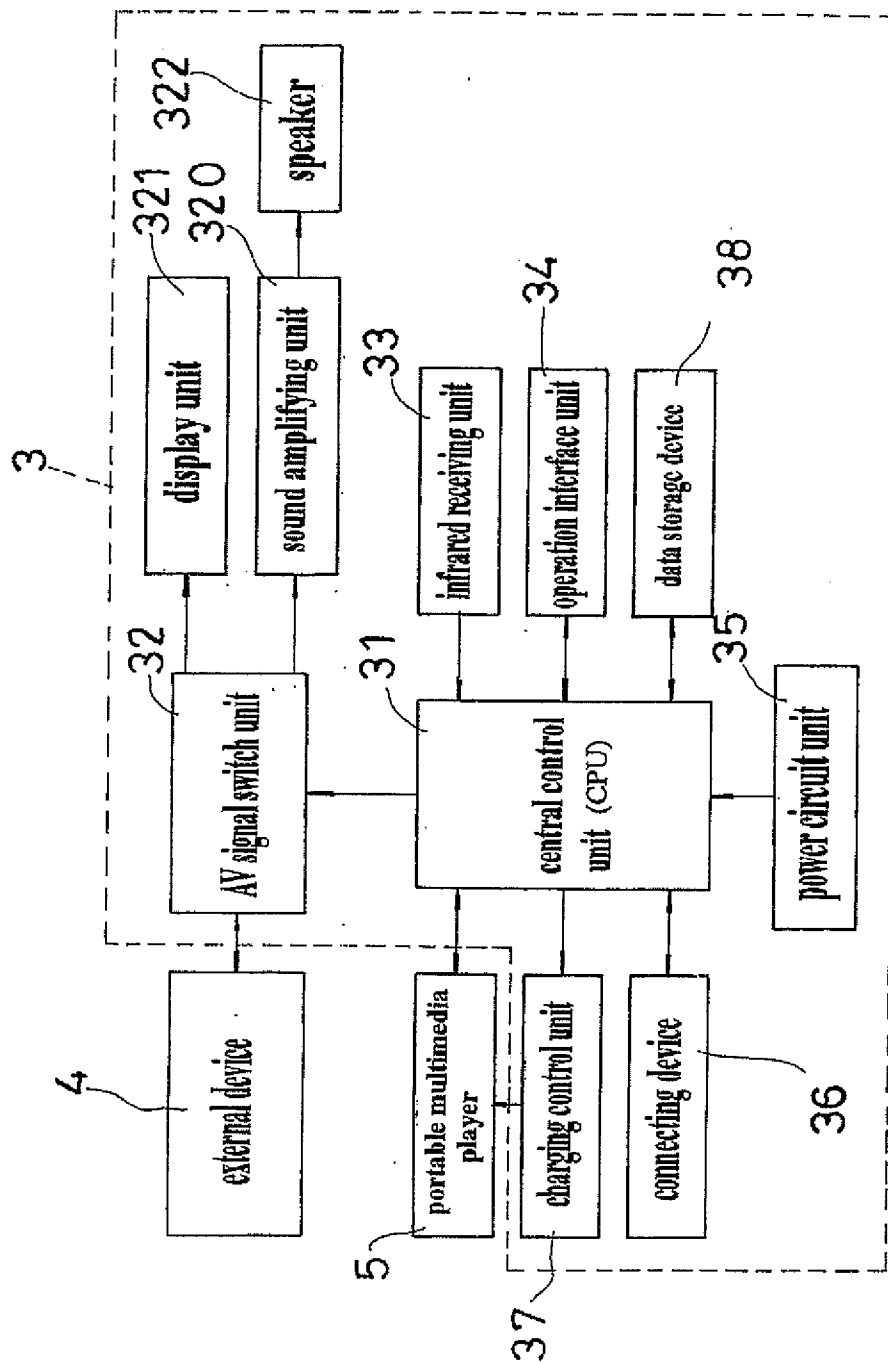


Fig. 1